

REMARKS

In the office action, claims 1 - 10 were provisionally rejected under the judicially created obviousness-type double patenting policy; and claims 1 - 10 were rejected under 35 U.S.C. §103(a) over U.S. Patent No. 5,528,630 (to Ashley et al.).

Responsive to the obviousness-type double patenting rejection, a terminal disclaimer is being filed herewith.

The present invention is directed to providing a second high pass transfer function for the line driver in a transceiver circuit. As stated in the application on page 6:

The capacitors 12 and 24 form a second order high pass transfer function for the line driver. Capacitors 12 (C_1) form a zero at zero and a pole at $P_1 = -1 / (R_1 C_1)$. Capacitors 24 (C_2) form a zero at $z = -1 / (R_3 C_2)$ and a pole at

$$p_2 = \frac{-1}{\left(R_3 - \frac{R_2}{k+1}\right)C_2}$$

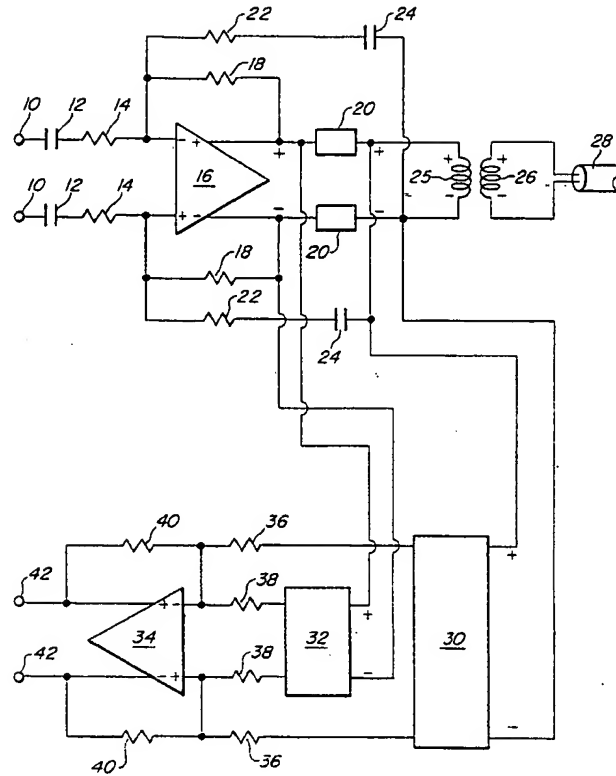
Zero z is at a much smaller frequency than p_2 . The transfer function of the line driver configured as a 2nd-order high pass filter is provided by:

$$\frac{V_{OPAMP}}{V_{IN}} = \frac{R_2 C_1 s (1 + R_3 C_2 s)}{(1 + R_1 C_1 s) \left[1 + \left(R_3 - \frac{R_2}{k+1} \right) C_2 s \right]}$$

Therefore, even if the optimum gain discussed above could not be met due to complex characteristic impedance of a transmission line, the second order high pass characteristic shown above still appears in the transfer function from the input (V_{IN}) to the receive path input (V_{RX}).

Application, page 6, lines 8 - 14.

The capacitors 12 and 24 are shown in Figure 1 of the present application as follows:



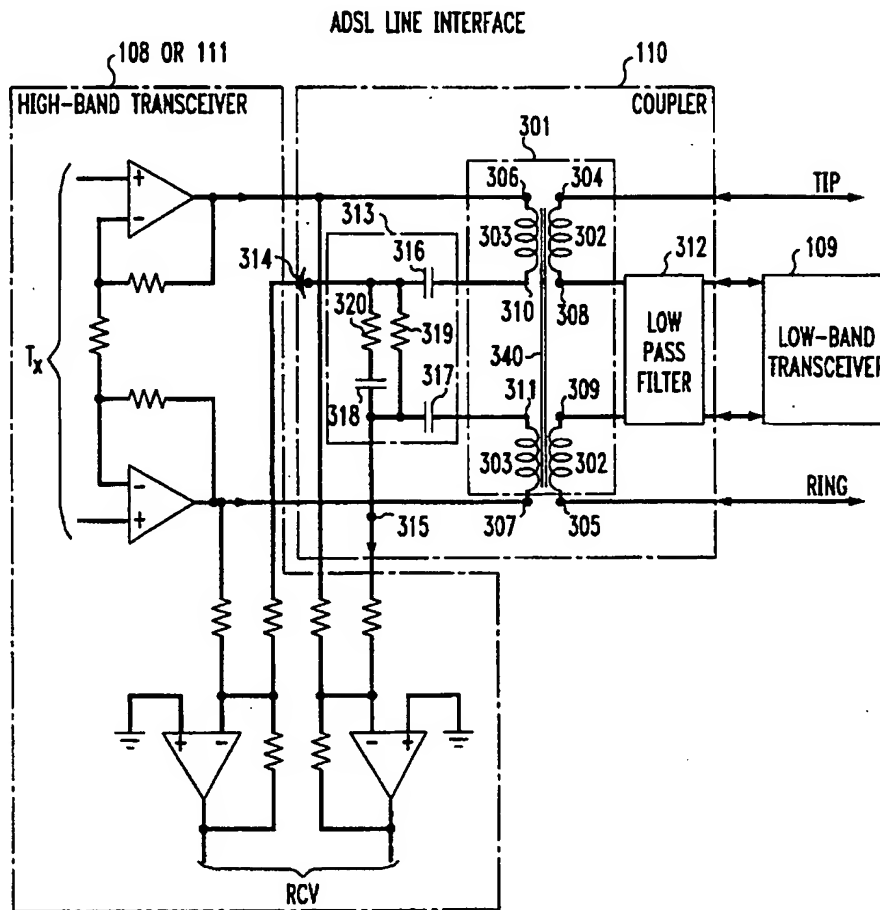
Application, Figure 1. As further stated in the application, "[c]apacitors 12 and 24 in Figure 1 implement a second order high pass filter function". Application, page 4, lines 19 - 20.

The Ashley et al. reference discloses a coupler for use with a transceiver in a multi-frequency communication system. The coupler includes a pair of primary transformer windings (303) and an impedance circuit (313) between the two primary windings (303). The transmitter portion of the circuit includes a pair of amplifiers, each of which includes a single feedback path having a resistor.

The coupler of Ashley et al. includes no capacitor in the transmitter output path to the transmitter amplifiers, includes no capacitors in the feedback paths to the transmitter

amplifiers, and includes no other structure for achieving a high pass transfer function.

Figure 3 of the Ashley et al. reference is shown below.



Ashley et al., Figure 3.

There is no structure disclosed in Ashley et al. for achieving a second order high pass transfer function as required by claim 1 of the present application. The capacitors (316) in the above circuit are not part of a feedback path to the transmitter amplifiers, but rather form part of the paths to the receiver portion of the circuit. The capacitors (316) and (317) in Ashley et al. are part of a termination network with an impedance matching the characteristic impedance of the line. They do not result in any high-pass transfer characteristic for the transmit path. The subject matter of claim 1, therefore, is not taught,

suggested or disclosed in Ashley et al.

Although the office action states that Ashley et al. does not disclose such a second order high pass transfer function, the office action further states official notice is taken that such is well known in the art. This is improper as a matter of law. The test for obviousness under §103 is whether the subject matter of the claims would have been obvious at the time of the invention to one of ordinary skill in the art in view of the cited references. 35 U.S.C. §103(a). As stated by the Court of Appeals for the Federal Circuit:

To reach a proper conclusion under §103, the decision maker must step backward in time and into the shoes worn by a person having ordinary skill in the art when the invention was unknown and just before it was made.

In re Fine, 837 F.2d 1071, 1074, 5 U.S.P.Q.2d 1586, 1598 (Fed. Cir. 1988).

A rejection under §103 must rest on a factual basis without hindsight reconstruction of the invention from the prior art. In establishing a *prima facie* case of obviousness, it is incumbent on the examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. A bare statement that a feature is well known in the art fails to present a *prima facie* case of obviousness absent supporting evidence. Ex parte Clapp, 227 U.S.P.Q. 972, 973 (Bd.Pat.App.&Int. 1985). No such supporting evidence is provided in the office action, and the statement that this element is well known is not even taken under oath.

Moreover, the requisite motivation to combine known features and functions with the disclosure of Ashley et al. must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the

art and not from the applicant's own disclosure. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1052, 5 U.S.P.Q.2d 1434, 1452 (Fed. Cir. 1988), *cert denied*, 488 U.S. 825, 102 L.Ed.2d 51, 109 S.Ct. 75 (1988).

Claim 1, therefore, is considered to be in condition for allowance.

Independent claim 4 requires, in part, that the transmission line interface circuit includes two pairs of feedback paths for the transmission amplifier. The circuit of Ashley et al. includes not such two pairs of feedback paths for its transmission amplifiers. Again the paths that include the capacitors (313) in Ashley et al. are coupled to the receiver circuit, not back to the transmitter circuit. Claim 4, therefore, is considered to be in condition for allowance.

Independent claim 8 requires, in part, that the transmission line interface circuit provide a second order high pass transfer function. For the reasons discussed above with reference to claim 1, claim 8 is also considered to be in condition for allowance.

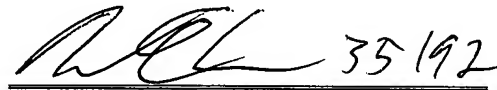
Independent claim 11 requires, in part, that the line interface circuit include a positive feedback path and a transmitter amplifier, the positive feedback path including a first high pass transfer unit. The Ashley et al. reference discloses no such positive feedback path including a first high pass transfer unit. Claim 11, therefore, is considered to be in condition for allowance.

Independent claim 15 requires, in part, that the transmission circuit include a pair of first high pass transfer elements in a transmitter input path, and a pair of second high pass transfer elements in a pair of feedback paths coupled to a transmitter amplifier. The Ashley et al. reference discloses no such pairs of high pass transfer elements in these paths. Claim 15, therefore is considered to be in condition for allowance.

Dependant claims 2 and 3 depend from and further limit the subject matter of claim 1; dependant claims 5 -7 depend from and further limit the subject matter of claim 4; dependant claims 9 and 10 depend from and further limit the subject matter of claim 8; dependant claims 12 - 14 depend from and further limit the subject matter of claim 11, and dependant claims 16 - 17 depend from and further limit the subject matter of claim 15. Each of the dependent claims 2 - 3, 5 - 7, 9 - 10, 12 - 14 and 16 - 17, therefore, is also in condition for allowance.

Applicant submits, therefore, that each of claims 1 - 17 is in condition for allowance. Favorable action consistent with the above is respectfully requested.

Respectfully submitted,

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William E. Hilton
Registration No. 35,192
Gauthier & Connors, LLP
225 Franklin Street, Suite 3300
Boston, Massachusetts 02110
Telephone: (617) 426-9180
Extension: 111